FLAT: Folded Low-profile Autonomous star Tracker for cubesats/smallsats

Completed Technology Project (2012 - 2013)

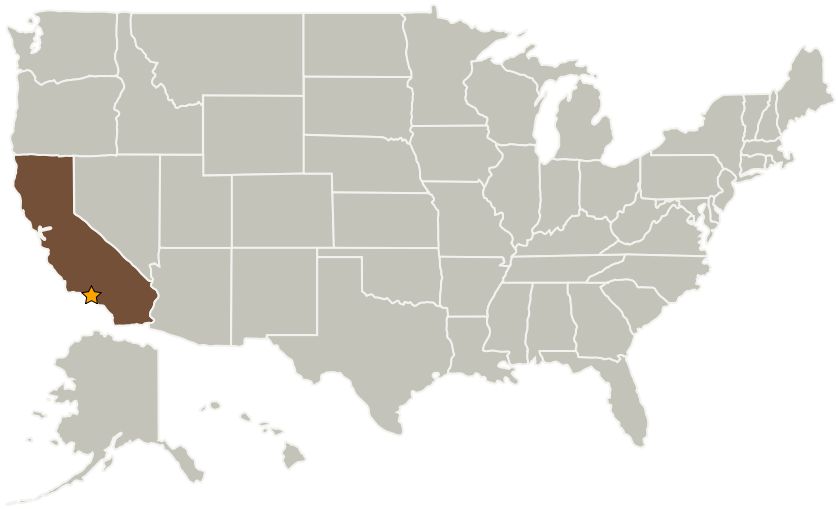
Project Introduction

Perform trade studies over folded aperture optics to specify design parameters - diameter, effective aperture, sensitivity, field of view; Model, design, fabricate and test folded optics to demonstrate sufficient image quality for detecting stars; Identify components - imager and processor platform to obtain system level parameters (weight, volume, power, cost); Night sky test of folded optic to demonstrate star visibility.

Anticipated Benefits

Successful demonstration of FLAT will provide an in-house capability for precision pointing of cubesats and smallsats. Enables and expands mission scenarios and applications of cubesats, smallsats. This enables precision pointing of cubesats for Earth orbiters.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California
University of California-San Diego(UCSD)	Supporting Organization	Academia	La Jolla, California

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Center Innovation Fund: JPL CIF

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Primary U.S. Work Locations

California

Project Management

Program Director:
Michael R Lapointe

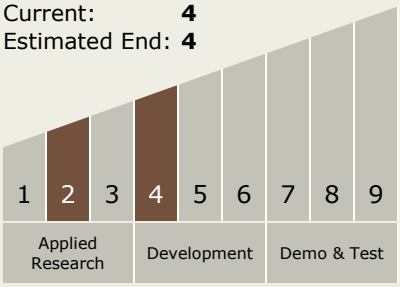
Program Manager:
Fred Y Hadaegh

Project Manager:
Jonas Zmuidzinas

Principal Investigator:
Anup B Katake

Technology Maturity (TRL)

Start: **2**
Current: **4**
Estimated End: **4**



Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  - TX12.4 Manufacturing
    - TX12.4.3 Electronics and Optics Manufacturing Process